



Regional Bureau
for Science in the
Arab States

United Nations
Educational, Scientific and
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المكتب الإقليمي للعلوم
في الدول العربية

منظمة الأمم المتحدة
للتربية والعلم والثقافة

القاهرة-5 Cairo

Special Session S3

Groundwater Governance In the Arab Region

11:25-12:25, 30 March, 2017

Moderator

Bisher Imam, UNESCO Cairo Office

Keynote Speakers:

Waleed K. Zubari (WSTA/AGU, Bahrain)

Abdelkader Larabi (Regional Water center of Maghreb, M)

Panel

Waleed K. Zubari (WSTA/AGU, Bahrain)

Abdelkader Larabi (Regional Water center of Maghreb, Morocco)

Jamal Abdo, (Water Research Center, U of Khartoum, Sudan)

Ziyad Khayat (UN-ESCWA, Lebanon)



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Groundwater Governance Global Vision and Framework for action

Bisher Imam

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Cairo, Egypt

UNESCO Special Session on “Groundwater Governance in the Arab Region”, 30 March, 2017



Source: NASA-JPL (GRACE Mission)

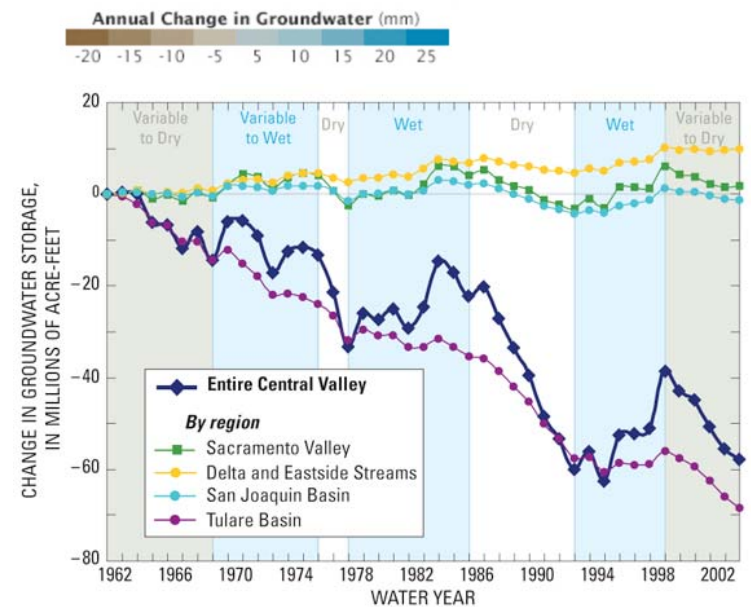
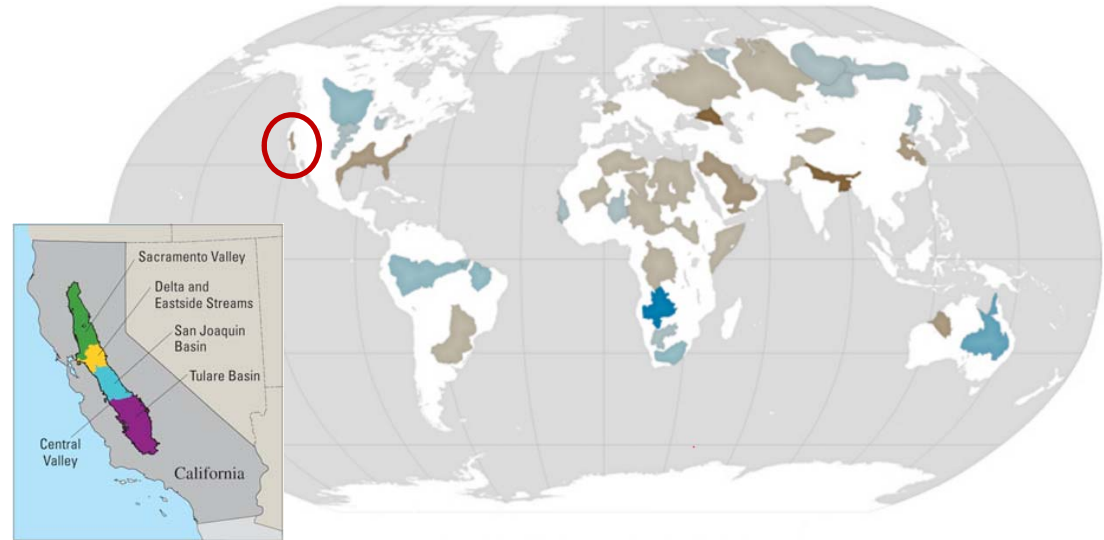
Groundwater provides

- Drinking water for 50% of the world's population
- 43% of irrigation water worldwide

But,

Groundwater Abstraction has increased **300%** over the past **50** years

Groundwater levels/storage are declining in several of the world's **intensely used agricultural** areas and around numerous **megacities**



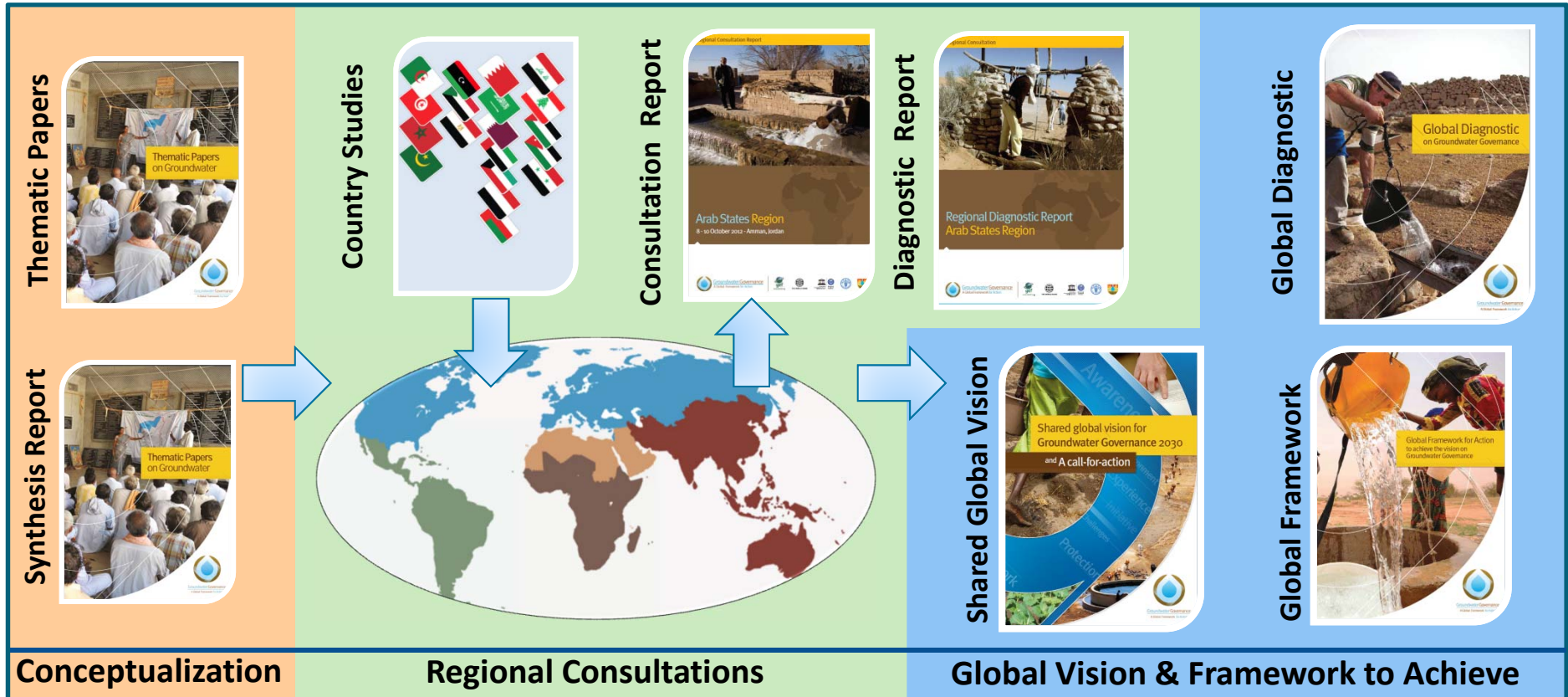
Source: USGS



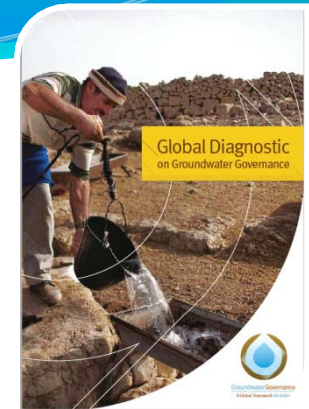
Groundwater Governance
A Global Framework for Action



Embed a process of improved **groundwater governance** to **halt** the current **trend of resource depletion** and **degradation** and **lead to positive** environmental, social and economic outcomes



Global Diagnostic



Key deficiencies in groundwater governance

- **Low** political **commitment** and inadequate leadership from government agencies
- **Limited awareness** of long-term groundwater risks
- Significant **gaps in information** about the resource
- **Non-performing** legal and regulatory systems on groundwater
- **Insufficient** stakeholder **engagement** in groundwater management
- **Incentive** structures **not aligned** with objectives of **sustainable** and efficient groundwater use
- **Limited** integration of **science** based groundwater understanding in related national policies

The Shared Vision

By 2030

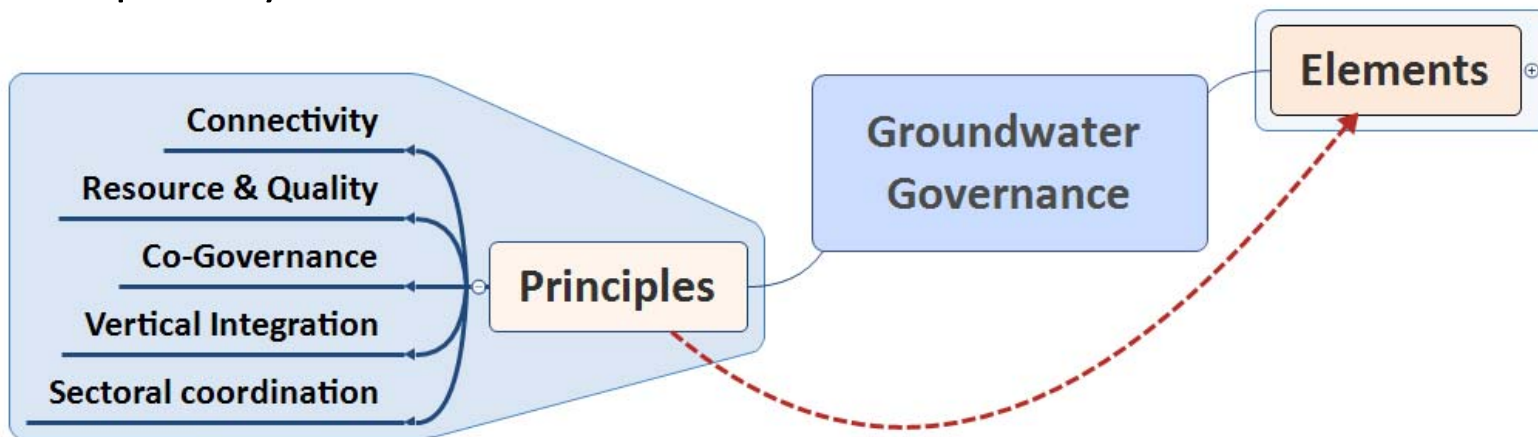
- There are **appropriate and implemented legal, regulatory and institutional frameworks** for groundwater that **establish public guardianship and collective responsibility**, permanent engagement of **stakeholders** and beneficial **integration with other sectors**, including other uses of the subsurface space and its resources
- All major aquifer systems are **properly assessed**, with the resulting information and **knowledge shared**, making use of up-to-date communication techniques
- Groundwater management **plans are prepared and implemented** for the priority aquifers
- Groundwater management **agencies**, locally, nationally and internationally, are **adequately resourced** and **their key tasks of capacity building**, resource and quality monitoring, and promotion of demand management, coupled with supply-side measures, **are secured**
- Incentive frameworks and investment programmes foster sustainable, efficient groundwater use and adequate aquifer systems protection.



Principles of Effective GW Governance

Governance:

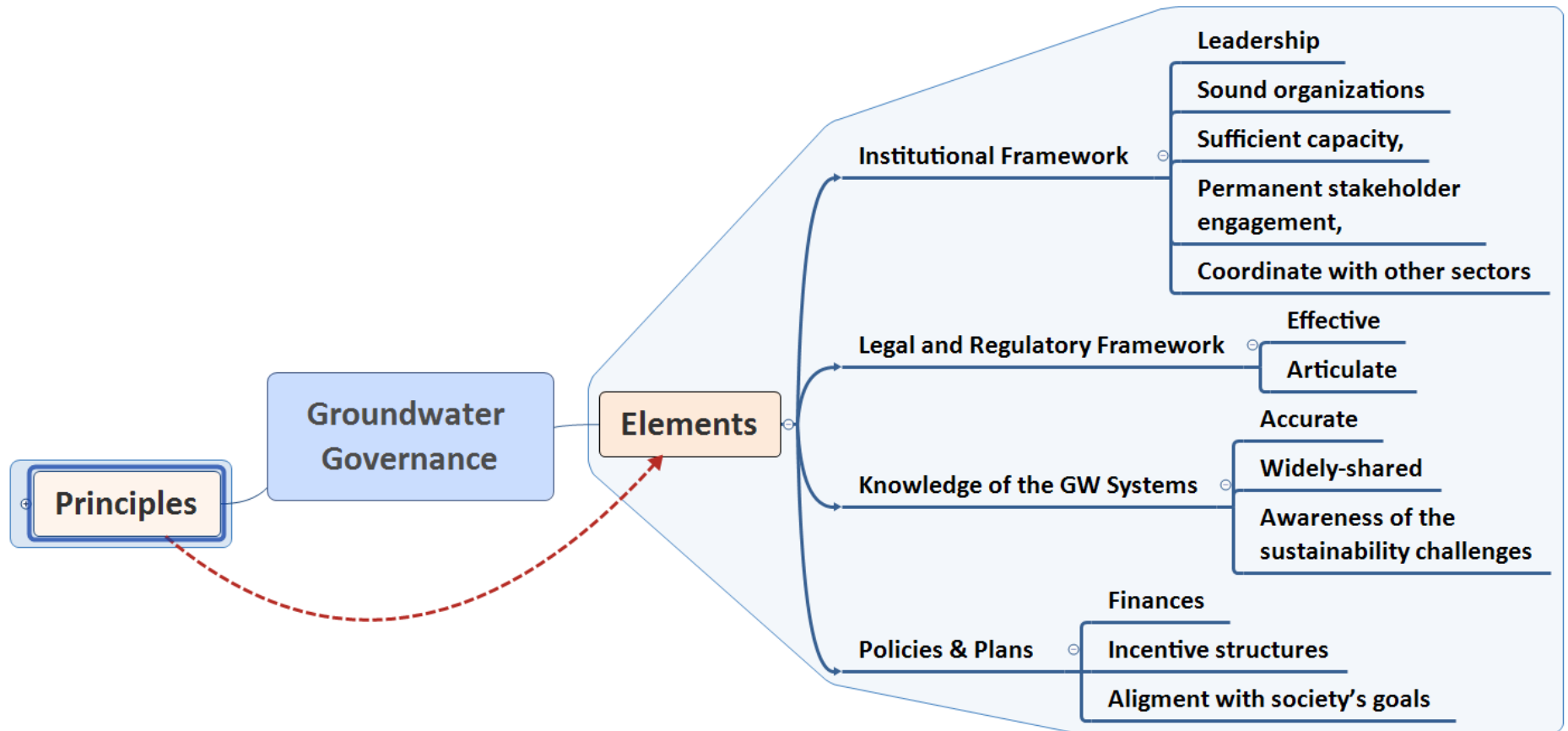
The promotion of responsible action to ensure the protection and sustainable use of groundwater resources and long term management of aquifer systems.



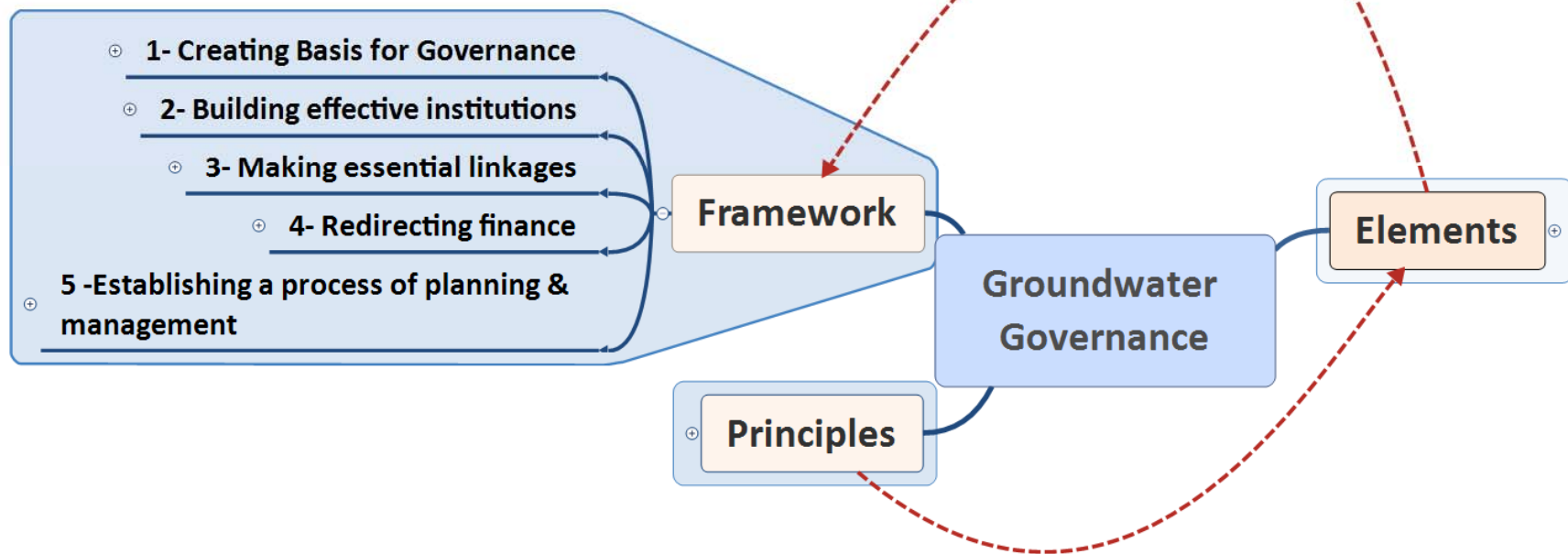
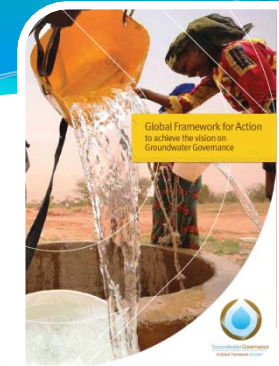
Management

activities undertaken by mandated actors to sustainably develop, use and protect groundwater resources.

Elements of effective GW governance



The Global Framework





1-Creating the Basis for Governance

- Conducting **Initial** GW Governance **diagnostic**.
- Identifying and developing **leadership**.
- Organizing **data** collection, information generation and knowledge sharing
- Undertaking **awareness** raising programmes
- Facilitating stakeholder **engagement**

2- Building effective institutions

- Responsive laws and regulations
- Establishing Sound Institutional Design and Government Capacity
 - **National, Provincial, local**
- Making Stakeholder Engagement a Permanent Feature
- Putting Cross-Sector Coordination into Practice,
- Dealing with Transboundary Aquifers

Criteria for evaluating local governance options

Berkley Law -- Guidelines

California Sustainable GW Management Act

Sustainable Groundwater Management Agencies



3- Making essential linkages

- Identifying **the interdependencies**.
- Defining area-specific groundwater management issues, goals and priorities
- Governing groundwater in an integrated water resources context
 - Demand management
 - Integration
 - Climate variability/change
- **Linking** groundwater management and governance to
 - sanitation and to waste and wastewater management.
 - land use and land use practices.
 - use of subsurface space and subsurface resources.
- Linking **water and energy** in groundwater management and governance
- **Mainstreaming** groundwater in other policies.

4- Redirecting Finances

- Aligning incentive systems
- Investing in governance
 - Human Capacity
 - Institutions/Organizations
 - Innovative approaches
 - Scientific/
- Investing in management

5- Start the Process of Planning and Management

- Identification and prioritization
 - Assessment of Status
 - Management Characterization of the System
- Drawing Up Management Plans for Priority Aquifer Systems
 - Consultation
 - Preparation
 - Adaptation to local institutions
- Implementing and Reviewing Plans
 - Adaptive management is ***not an excuse to delay tough choices/decisions***
 - Monitoring, Reporting and Evaluation

Capacities???

- Monitoring,
- Characterization
- Modeling
- Legislating
- Management
- Enforcement
- Technical/vocational
- Coordination & IWRM
- Negotiation/Conflict Resolution
- Stakeholders interaction
- Political
- And many more ... diverse skills

In the Arab Region

Traditional capacity development approaches will not suffice to support the transition from the existing groundwater management practices to governance goals.

Reliance on shared aquifer resources necessitate regional and sub-regional coordination, sharing of information, and consistent management and governance of resources.

What is needed is a regional platform, focusing on cooperative development of wide spectra of knowledge building and capacity needs including both human and institutional capacities.



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Expert Meeting on Capacity Building on Groundwater Governance in the Arab Region

May 2-4, 2017
Manama, Bahrain



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Share the outcomes of the Project “Groundwater Governance - A Global Framework for Action”, and inform on the progress made thus far

Assess the current status of human and institutional capacity at local and national levels in the area of groundwater resource management and governance in the Arab region

Develop an actionable capacity development roadmap to support Arab countries in their efforts to achieve the shared global vision for groundwater governance

Develop an innovative regional framework to create synergy between countries and groundwater stakeholders in the region, including UN agencies, development partners, with focus on capacity development and filling the information gap in support of sustainable management and public guardianship of groundwater resources in the Arab Region